Current knowledge on coronary heart disease

Incidence of coronary heart disease

There are no directly measured national data on the incidence of CHD in Australia. However, there are estimates available of major coronary events that warrant admission to hospital or cause death. It is estimated that there were 18,817 CHD events (mainly heart attacks) among people aged 35–69 years in 1997–98 (AIHW 2002). Non-fatal heart attacks accounted for two-thirds of such cases. However, these estimates do not include cases of CHD that present without any symptoms or cases of angina that do not require management in hospital.

Survival, disability and quality of life after a CHD event

Of those people aged 35–69 years having a coronary event during 1991–93, 36% of men and 40% of women died (AIHW: McElduff et al. 2000). Men with a previous coronary event accounted for
30–40% of male coronary deaths, compared with 20–30% in women. This confirms the very high death rate that still occurs among those having a coronary event. However, given the large number of events occurring each year, it is also evident that there are many Australians needing rehabilitation and secondary prevention.

Physical problems associated with myocardial infarction include unexpected weakness caused by deconditioning, breathlessness on exercise, and angina.

About one in six people with acute myocardial infarction become depressed at the time. This can cause fatigue, reduced concentration, irritability and disturbed sleep (Hare & Bunker 1999). Depression is associated with increased mortality, recurrent coronary events, angina, heart rhythm disturbances, rehospitalisation, emotional instability, prolonged disability, impaired quality of life and continued smoking in cardiac patients (Creed 1999). It is therefore important to attend to psychological factors in these patients.

Most people with myocardial infarction have anxiety problems on admission to hospital and again just before discharge (Thompson & Lewin 2000). Although in most cases anxiety and depression slowly ease over the following weeks, about one in four people remain distressed 1 year after the event.

Cost of coronary heart disease

There are no up-to-date figures on the current cost of CHD in Australia. The latest estimates available are now 10 years old. According to these estimates, CHD accounted for
$894 million in 1993–94 and was the most expensive cardiovascular condition to treat (23% of total cost of cardiovascular disease and 2.7% of total recurrent health expenditure) (AIHW: Mathers & Penm 1999). This included hospital services, medical services, pharmaceuticals, allied health services, nursing homes and research. The majority of resources were spent on hospital services (64%) and drugs (12%). As the incidence of CHD is unknown, it is not possible to estimate lifetime health system costs for a person with CHD.

The total cost of acute myocardial infarction (heart attack) in 1993–94 was estimated at $164 million (18% of CHD cost). The average total cost per hospital admission for acute myocardial infarction was $5,898 in 1998–99 (AIHW 2001).

Risk factors for coronary heart disease

The major modifiable risk factors for CHD are:

- tobacco smoking
- high blood pressure
- high blood cholesterol
- overweight and obesity
- insufficient physical activity
- diabetes.

People who are depressed, socially isolated or without quality social support may also have a greater risk of developing CHD.

Strategies for reducing the recurrence of CHD events

The following measures are effective in reducing the risk of further coronary events in people with established CHD:

- lowering of high blood pressure
- smoking cessation
- weight control, if appropriate
- healthy diet
- regular exercise
- antiplatelet drugs (aspirin) used long-term
- lowering of blood cholesterol with drugs (statins), even when in the 'normal' range in patients with acute myocardial infarction or unstable angina
- beta blockers for patients with acute myocardial infarction or heart failure
- angiotensin-converting enzyme (ACE) inhibitors for patients with acute myocardial infarction or heart failure
- tight control of diabetes.

There is evidence that starting these therapies in the hospital can lead to better long-term use and better clinical outcomes (Fonarow et al. 2001). Table 3 lists goals for reducing particular risk factors.

Table 3: Goals for prevention of CHD events for people with known CHD

Risk factor	Goal
Total cholesterol	<4.0 mmol/L
LDL cholesterol	<2.5 mmol/L
HDL cholesterol	>1.0 mmol/L
Triglycerides	<2.0 mmol/L
Smoking	Cessation
Blood pressure	<140/90 mmHg
Body mass index (BMI)	<25 kg/m^2
Waist circumference	Male: <94 cm; Female: <80 cm
Physical activity	Establish/maintain at least 30 minutes of moderate intensity physical activity on 5 or more days of the week.

Source: National Heart Foundation of Australia and Cardiac Society of Australia and New Zealand 2003

Cardiac rehabilitation

What is cardiac rehabilitation and who provides it?

Cardiac rehabilitation encompasses all measures used to help heart patients. It aims to:

- maximise physical, psychological and social functioning to enable patients to live productively and with confidence
- assist and encourage behaviours that are likely to reduce the risk of further cardiovascular events and conditions, such as identifying and modifying risk factors and encouraging adherence to recommended medical therapies.

Cardiac rehabilitation services should include physical activity, health education and counselling programs tailored to the individual needs of the patient and family (Goble & Worcester 1999, NSW Health Department 1997).

The World Health Organization recommends that cardiac rehabilitation services be available, and routinely offered, to everyone with cardiovascular disease and be delivered by trained health professionals. Most programs in Australia provide services for patients following heart attack, heart surgery and coronary angioplasty. Some programs also cater for patients with stable angina or chronic heart failure (AIHW 2001).

Cardiac rehabilitation should begin in hospital as soon as possible after admission. With the trend toward shorter hospital admissions, there is a greater need for patients to continue rehabilitation services on an outpatient or community basis. These programs provide the link between inpatient hospital care and ongoing care.

Group outpatient programs, conducted in hospitals and community health centres, are the main models operating throughout Australia, but programs vary across the country. A few Divisions of General Practice run programs as well. Programs generally consist of weekly or twice-weekly sessions of group education and discussion in addition to light to moderate exercise. They are conducted by multidisciplinary groups of health professionals. Patients attend as soon as possible after leaving hospital. Partners and other family members are encouraged to attend too. Home-based and outreach programs are also being developed in rural and remote areas of Australia.

Use of programs

There are no national data systems to monitor the proportion of patients who enter and complete a cardiac rehabilitation program. Details of the data available in each state are shown in Appendix A and a summary is presented here.

Where programs exist, only a minority of eligible patients are enrolled in, or attend, a structured outpatient cardiac rehabilitation program. In Victoria, 53% of patients discharged from hospital following coronary artery bypass surgery participated in a cardiac rehabilitation program, compared with 27% of patients with heart attack and 10% of patients after angioplasty (Bunker et al. 1999). Overall, only one in three eligible patients joined a cardiac rehabilitation program.

In Western Australia less than one in five patients admitted to hospital for a cardiac condition were likely to receive rehabilitation. In the Hunter region of New South Wales, 43% of eligible patients reported being invited to attend outpatient cardiac rehabilitation. Overall, 19% of eligible patients completed a program following discharge from a public hospital.

There is little information on participation rates among Aboriginal and Torres Strait Islander people. A study of patients who presented to Townsville General Hospital during or after a cardiac event in 1997–98 showed that Aboriginal and Torres Strait Islander patients were significantly less likely to enter cardiac rehabilitation programs than other Australians (5% versus 31%) (Traven Lea, personal communication).

Overseas there is evidence that women, older patients, those living in more deprived areas, those living in rural areas and those who are unemployed are less likely to undergo cardiac rehabilitation (King et al. 2001).

Health outcomes of patients attending outpatient cardiac rehabilitation

There is good evidence that cardiac rehabilitation confers beneficial effects, above usual medical care, on exercise capacity, blood lipid levels, smoking, exercise habits, use of medications, social adjustment, use of health-care services, and on the risk of recurrence of cardiac events or deaths (O'Connor et al. 1989, Goble & Worcester 1999).

There are no national data on outcomes for patients who undergo cardiac rehabilitation. A study involving 1,567 patients from 15 cardiac rehabilitation programs in Victoria showed significant improvements in physical and mental health-related quality of life scales. On completion of a cardiac rehabilitation program, the participants' average scores on all physical and mental scales considerably exceeded those at entry and those reported by persons with heart disease in the 1995 National Health Survey.